

AMENDMENT TO THE CLAIMS

Claims 1-34 (Cancelled)

- 35.(New) A method of breaking rock which includes the steps of:
- (a) loading at least a first cartridge into a hole in a rock face;
 - (b) confining the cartridge in the hole;
 - (c) initiating a propellant in the cartridge thereby to cause the release of pressurised material which generates a pressure wave inside the cartridge,
 - (d) supporting a base of the cartridge to prevent the base from fracturing under the effect of the pressurised material,
 - (e) deforming the pressure wave by means of one or more wave deforming members on an inner or outer side of the cartridge to create at least one region inside the hole which has an increased stress concentration, and
 - (f) directing the pressurised material at least to a periphery of the base to initiate breakage of rock adjacent the periphery.
- 36.(New) A method according to claim 35 wherein the cartridge is supported inside the hole at a location which is spaced from the bottom of the hole.
- 37.(New) A method according to claim 35 wherein the first cartridge is positioned at a first location at or near a bottom of the hole and a second cartridge is positioned at a second location in the hole which is spaced from the first location.
- 38.(New) A method according to claim 37 which includes the steps of igniting propellant in the respective cartridges thereby to cause the release of pressurised material inside each cartridge, and at each location directing force which is generated by the respective

pressurised material onto a respective surface of a wall of the hole at or near a base of the respective cartridge.

39.(New) A method according to claim 35 wherein the pressure wave is also deformed by suitably shaping a base or a side wall of the cartridge.

40.(New) A method according to claim 35 which includes the step of detonating a first high-explosive inside the hole to generate a localised explosive shock wave in the rock.

41.(New) A method according to claim 40 wherein a second high-explosive is detonated a predetermined time period after detonation of the first high-explosive.

42.(New) A method according to 35 which includes the step of generating a high pressure jet of a second material which has a density which is greater than the density of the pressurised material.

43.(New) A method according to claim 42 wherein the high pressure jet of the second material is generated at one or more predetermined positions in the cartridge.

44.(New) A method according to claim 42 wherein the high pressure jet of the second material is generated by the action of the pressurised material, released in step (c), on at least one member which includes the second material.

45.(New) A method according to claim 42 wherein the high pressure jet of the second material is generated by the action of an explosive on at least one member which includes the second material.

46.(New) A method according to claim 45 wherein the explosive is detonated by control means.

47.(New) A method according to claim 35 wherein the propellant is initiated at a first predetermined time at least at a first zone and which includes the step at a second predetermined time of carrying out at least one of:

- (i) detonating an explosive in the hole, and
- (ii) initiating the propellant at least at a second zone in the hole.

48.(New) A method according to claim 47 wherein the explosive is inside the cartridge or on an outer side of the cartridge.

49.(New) A method according to claim 47 wherein the propellant and the explosive are initiated and detonated, respectively, by means of respective control signals which are transmitted from a control unit or units via control lines or by using wireless techniques.

50.(New) A method according to claim 35 wherein the propellant creates a first pressure wave and which includes the steps of creating a second pressure wave and allowing the pressure waves to interfere with each other at a predetermined region.

51.(New) A method according to claim 50 wherein the pressure waves are generated by initiating the propellant at two respective points which are spaced from each other.

52.(New) A method according to claim 35 wherein in step (c) the propellant is initiated at least at first and second points which are spaced from each other in the cartridge, thereby to generate at least two wave fronts which are caused to interact with each other, each wave front causing the release of pressurised material.

53.(New) A method according to claim 52 wherein the cartridge is elongate and the first and second points are located respectively at opposed ends of the cartridge.

54.(New) A method according to claim 35 which includes the steps of loading a second cartridge into the hole and initiating the propellant in the first cartridge and a propellant in the second cartridge at respective first and second points thereby to cause the generation of pressure waves which are allowed to interact with each other at a location which is between the first and second points.

55.(New) Apparatus for breaking rock which includes a first cartridge with a base and a side wall which form an enclosure, a propellant inside the enclosure, wherein a discontinuous relatively weaker region of the container is formed at a junction between the wall and the base, and at least one pressure wave deforming member which is exposed to a pressure wave generated by initiating the propellant and which is selected from the following: at least one suitably shaped member inside or outside the cartridge; at least one suitably shaped member inside the propellant positioned at a desired distance relatively to the base.

56.(New) Apparatus according to claim 55 wherein the cartridge is shaped to direct a wave of pressurised material, produced by the propellant when initiated, towards a periphery of the base.

57.(New) Apparatus according to claim 55 which includes at least one high-explosive charge on or inside the cartridge.

58.(New) Apparatus according to claim 55 wherein the cartridge is made from a plastically deformable material.

59.(New) Apparatus according to claim 55 which includes at least one member, which is made from a material which has a density greater than the density of the propellant, on or inside the cartridge.

60.(New) Apparatus according to claim 59 wherein the member is turned into a high pressure jet by the action of the propellant when it is ignited.

61.(New) Apparatus according to claim 59 wherein an explosive which acts directly on the member is used to generate a high pressure jet of the material.

62.(New) Apparatus according to claim 55 which includes an explosive, and a control unit which initiates the propellant at a first predetermined time and which detonates the explosive at a second predetermined time.

63.(New) Apparatus according to claim 55 which includes at least first and second initiators for initiating the propellant at respective first and second points which are spaced from each other inside the cartridge.

64.(New) Apparatus according to claim 55 which includes a second cartridge which forms an enclosure for a propellant, each cartridge including a respective initiator for initiating the propellant in the respective enclosure, and wherein the cartridges are positioned in an assembly with the initiators at opposed remote points in the assembly.